

The City  
in the Digital  
Sprawl

## URBAN FEATURES IN THE DIGITAL AGE

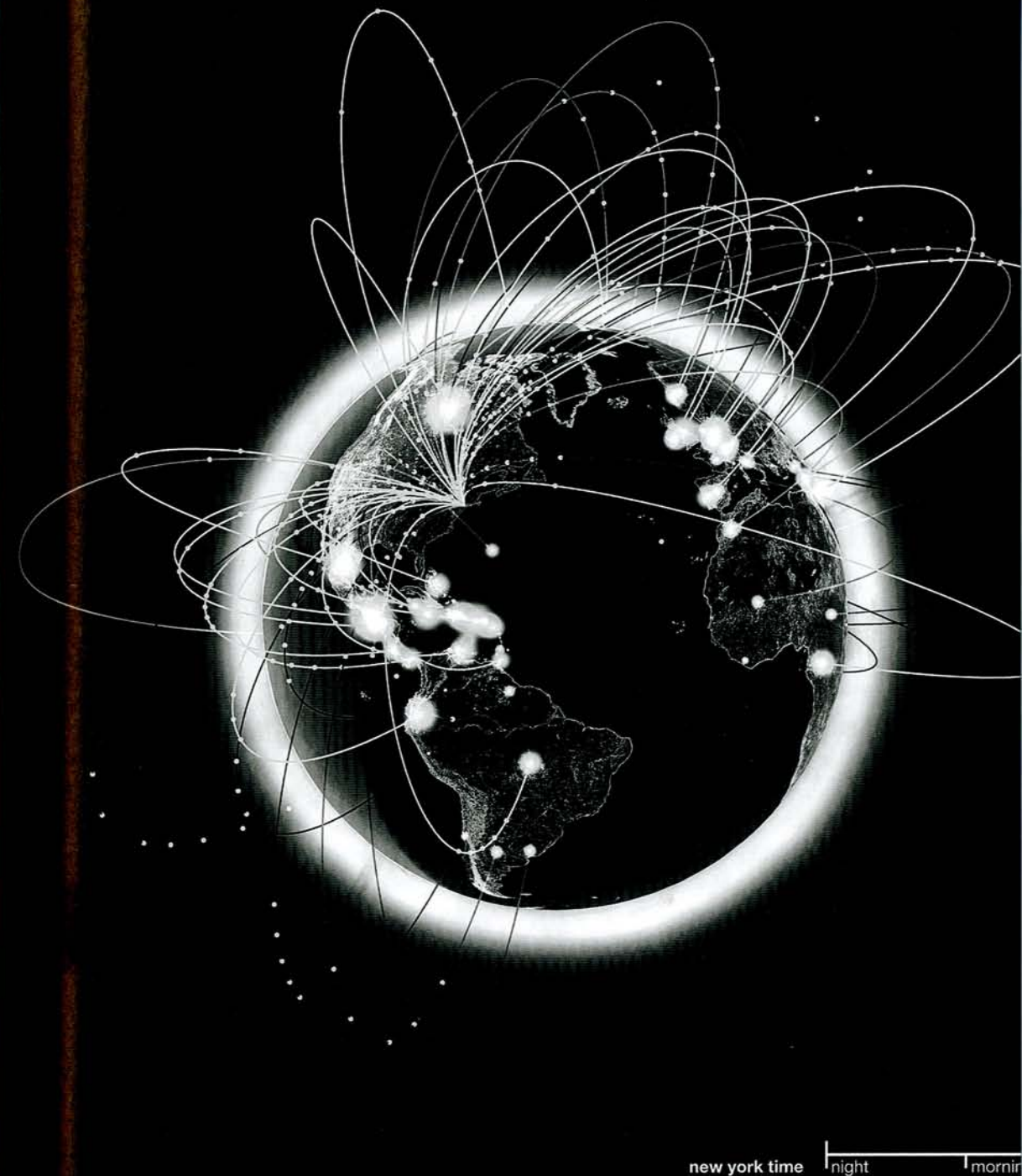
SENSEable City Laboratory, MIT, "Global Encounters," 2008. SENSEable City Laboratory. The map shows the flow of Internet traffic between New York and major cities around the world. There is perhaps no better illustration of the dematerialization of certain urban exchanges.

Digital architecture is inseparable from the perspectives of transformation of the city that have emerged with the development of information and communication technologies, from computers to cell phones. These relations provide an additional way to approach the changing status of architectural design. As we will see, they often appear as a consequence of the new regime that characterizes technology. This should not come as a surprise insofar as the new technological landscape is fundamentally urban.

Referencing this landscape is not enough to grasp the exact nature of the changes awaiting the city. To what extent are the new urban organization and urban life related to the development of digital technology different from the traditional ones that had been shaped by industrialization? Various answers have successively been proposed to that question; however, none has so far proved entirely satisfying.

Some ten to fifteen years ago, when the question of the impact of digital technology began to permeate the reflections on the future of the city, a number of hypotheses were made. The first one regards the possible dematerialization of many urban exchanges. In his 1995 book, *City of Bits*, William J. Mitchell evokes an urban life that regains its peacefulness with electronic intercourse taking over physical circulation.<sup>1</sup> Despite the seduction exerted by such a perspective, we now know that this is far from being the case: physical circulation has increased in direct proportion to the rise of electronic exchanges. In that respect, the Internet is extending a process that began at the end of the nineteenth century, with the development of mail-order by companies like Sears and Roebuck. Amazon is a distant inheritor of their path-breaking commercial practices. As a consequence from the increase of electronic circulation, the need for new physical infrastructure has never been greater in the contemporary urban environment, from Asia to Europe and the Americas.

<sup>1</sup> William J. Mitchell, op.cit.



A second hypothesis discusses the urban repercussions of digital culture, from a decentralized urban life, to the sprawl and other more radical forms of dispersion. Historically, the emergence of digital culture is intimately related to debates on the decentralization of urban life for military or economic purposes. As we have seen, using cybernetics as a guideline, Norbert Wiener envisioned for example a model of sub-urban rings of services allowing cities to prepare for possible nuclear strikes. Generally speaking, defense concerns and the emergence of electronic networks were among the main arguments for the American sprawl. In recent years, electronic nomadism and telepresence have made the economic and social decentralization a real possibility. On the one hand, the urban sprawl suggests a link with digital culture. On the other hand, however, this perspective sharply contradicts with studies on metropolization and its relation to digital networks. As discussed by authors such as Manuel Castells or Saskia Sassen,<sup>2</sup> metropolization is giving a new importance to the highly concentrated urban scenes of Manhattan or the City of London.

Is digital culture one of dispersal or urban concentration? Many spaces that are central in the production of digital culture, such as Silicon Valley or Cambridge, Massachusetts, are suburban and seem to epitomize the possibility of urban dispersion. However, Manhattan's Silicon Alley and downtown San Francisco have also played an important role in the past decade. The digital media cities might very well be as congested as the ones we currently inhabit. Digital culture and media cannot thus be characterized in terms of a single urban organization, but they do bring forth a discussion on the repercussions of the digital on the physical organization of cities and the relational organization of density in urban space.

While the previous argument addresses the relation of the digital to the urban form through the organization of physical space, another hypothesis addresses the effect of the new means of communication, particularly Internet-hosted networks and virtual spaces such as MySpace, Facebook and Second Life, on the urban experience of place. Through

<sup>2</sup> See, for instance, Saskia Sassen, *The Global City: New York, London, Tokyo* (Princeton: Princeton University Press, 2001), Manuel Castells, *The Informational City: Information Technology, Economic Restructuring, and the Urban-Regional Process* (Oxford: Basil Blackwell, 1989).

the virtual encounter of spatially distant people, the new urban society is often represented as one where the physical basis of sociability is declining in favor of less material, often delocalized, far-ranging systems and social networks. However, the degree of delocalization and immateriality in cities is not necessarily as extreme when compared to that prior to the development of the Internet. As sociologist Melvin Webber notes in his seminal 1964 article "The Urban Place and the Nonplace Urban Realm,"<sup>3</sup> urban life and urban experience were always synonymous with a partial dissociation from the constraints of locality. As for immateriality, the British sociologist of science and technology Steve Woolgar rightly points out that virtual interactions are all the more vivid when based on some material reality.<sup>4</sup> This was already the case with Bay Area Well, one of the first electronic communities that grouped people together who often knew each other and were of similar social affiliations.<sup>5</sup> And it is all the more true with networks such as Facebook, which build on college friendships.

Again, where does the difference lie? Could the digital media city just be the city we know with hypertrophied characteristics of more circulation, a more complex sequence of centers and peripheries, and more networks? Could we be, in Marc Augé's or François Ascher's terms, in a state of *super-* or *hypermodernity* and in super- or hypermodern cities rather than on the verge of a different mode of existence?<sup>6</sup>

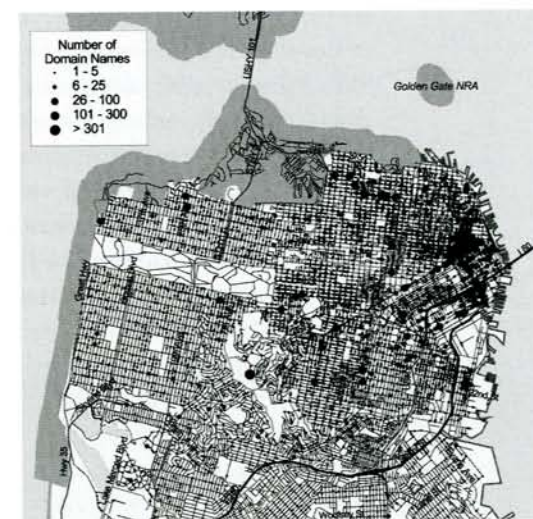
Here, I would like to propose three characteristics that distinguish the digital age city from its modern, super- or hypermodern counterparts. The first one regards the more and more individual nature of urban life

<sup>3</sup> Melvin M. Webber, "The Urban Place and the Nonplace Urban Realm," in M. M. Webber, J. W. Dyckman, D. L. Foley, A. Z. Guttenberg, W. L. C. Wheaton, C. Bauer Wurster, *Explorations into Urban Structure* (Philadelphia: University of Pennsylvania Press, 1964), pp. 79-153.

<sup>4</sup> Steve Woolgar (ed.), op. cit.

<sup>5</sup> See Katie Hafner, *The Well: A Story of Love, Death and Real Life in the Seminal Online Community* (New York: Carroll & Graf, 2001).

<sup>6</sup> Marc Augé, *Non-Places: Introduction to an Anthropology of Supermodernity* (Paris: 1992, English translation London, New York: Verso, 1995), François Ascher, *La Société Hypermoderne: Ces Evenements Nous Dépassent, Feignons d'en Etre les Organisateurs* (La Tour d'Aigues: Editions de l'Aube, 2004).



Map of internet domain names in downtown San Francisco. Courtesy Matthew Zook. Downtowns play a crucial role in the geography of the Internet.

and urban styles. In their everyday operations as well as in their prospects of development, cities have become increasingly dependent upon individual preferences, behaviors and strategies. From biometrics databases used to identify individuals to the cell phones and personal digital assistants that have become vital to so many urbanites, digital technologies are instrumental in this process of individualization.

A second emergent feature has to do with the rapid development of virtual spaces, from online stores to multi-user dungeons, or MUDs, from social networks to immersive art projects. Far from becoming estranged from physical reality, these spaces are actually more and more interfaced or even hybridized with the traditional three-dimensional reality, hence the impossibility to interpret the rise of digital technologies as a process of dematerialization. The future of cities seems to depend on the multiplication of such interfaces or hybrid situations often subsumed under the generic denomination of augmented reality.

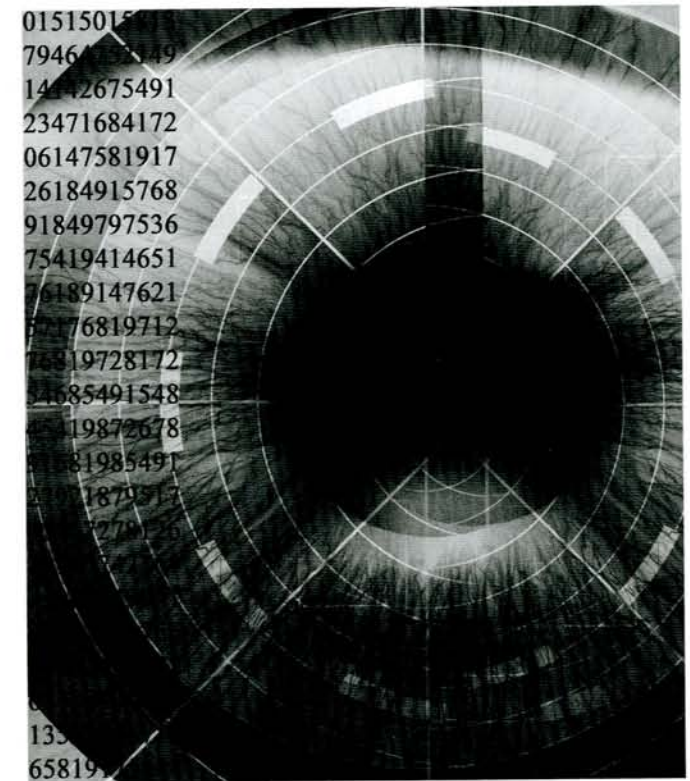
A last characteristic of the digital city, the most essential perhaps, is the importance of occurrences and events as defining elements of urban life and the prospects of urban development. Contemporary cities embrace these multiple occurrences and events that range from ordinary weather and traffic conditions to highly special moments like festivals, major sports competitions or political conventions. Digital tools are generally indispensable to advertise these and reveal their full scope. They are also instrumental in their integration into broader scenarios of evolution that tend to substitute themselves to traditional plans in many instances.

Reviewing in more details these emergent features of the digital city and examining how digital architecture relates to them, it appears that architecture plays a different role in the issues in question. The relations are not the same in the three cases. Whereas architecture is a major component of the reflections and practices that deal with augmented reality, its connections to individualization or the growing importance of events are of a less direct nature. Digital architecture is rather in sync with the two latter than a leading factor in their development.

## A CITY OF INDIVIDUALS

Contemporary urban life seems to follow Nicholas Negroponte's prediction regarding the increasing individualization that comes with digital technologies.<sup>7</sup> Clearly, they are not the cause of the evolution, which had begun before their massive diffusion. Prior to the advent of cell phones and personal digital assistants, this evolution had been identified and analyzed by sociologists like Ulrich Beck.<sup>8</sup> However, the pace has been considerably accelerated and the consequences are now visible to everyone.

At the intersection of individual trajectories and urban life, the digital dimension is present at various levels. As mentioned before, it is instrumental in the precise identification of individuals. Both public administrations as well as private companies are trying to achieve this, mainly for reasons of security. Fingerprinting is now computerized; iris scans no longer belong to science fiction, and we are on the eve of the generalization of DNA sampling and storage in databases. It should be noted that the age of computer-aided identification corresponds



Retinal Scan. 2008  
© argus456.  
Courtesy  
BigStockPhoto.com.

<sup>7</sup> Nicholas Negroponte, *Being Digital*.

<sup>8</sup> Ulrich Beck, *Risk Society: Towards a New Modernity* (Frankfurt: 1986, English translation London, Newbury Park, California: Sage Publications, 1992).

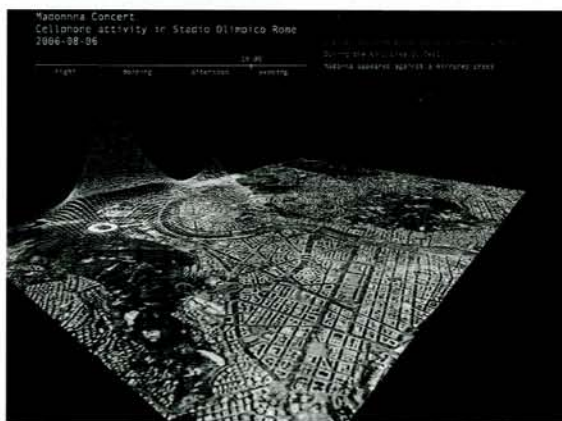
to the development of identity theft. The subject of the digital age continues to move along the frontier that separates determination and control from freedom and the delinquent possibilities that come with it.

Besides checking who you are, digital technologies are also instrumental in assessing where you are. GPS has become a common feature in commercial cars. Many cell phones allow their users to know their precise location, an information by the way not restricted to the cell phone users, since the plan providers also knows their positions through the same technique based on the triangulation of the origin of the signals. Dynamic cartographies of city rhythms have been proposed using the data collected by cell phone companies. At MIT, Carlo Ratti's SENSEable City Laboratory has mapped the intensity and distribution of phone calls in Rome.<sup>9</sup> Using this approach, they were able to minutely follow the movements of the attendance of a Madonna concert, from its arrival on foot or by public transportation to its dispersal after the event. Developed by the French phone company Orange and the

consulting firm faberNovel, the Urban Mobs technology has led to comparable achievements. Its creators have mapped mobile phone movements during the World Music Day in Paris or the calls placed in Madrid during the European Football Championship 2008 Final.<sup>10</sup>

Dynamic localization opens immense possibilities both for city officials and for companies trying to reach potential customers. The former will soon have at their dis-

SENSEable City Laboratory, MIT, phone calls in Rome during a concert of Madonna in August 2008. SENSEable City Laboratory.



<sup>9</sup> Francesco Calabrese, Carlo Ratti, "Real Time Rome", in *Networks and Communication Studies*, vol. 20, no. 3-4, 2006, pp. 247-258.

<sup>10</sup> <http://www.urbanmobs.fr/en/> (visited on 20 January, 2009).

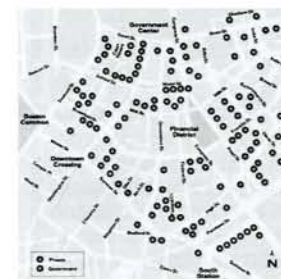
posal all sorts of real-time maps that will provide a much better understanding of urban operations. Coupled with the electronic tagging of spaces, the technology will also enable the latter to feed users of cell phones and personal digital assistants with commercial information suited to their individual tastes and behaviors. The process has already begun with smart phones like the Apple iPhone.

Besides knowing who and where people are, comes the possibility of knowing what they are doing. A city of individuals is also a city characterized by extended, generally computer-aided surveillance. This surveillance takes two forms. Physical bodies are watched through increasingly numerous security cameras the presence of which extends far beyond the immediate surroundings of administrations and banks. Electronic preferences, moves and patterns of use are, as for them, monitored and stored on all sorts of Internet servers. Surveillance is not only a passive condition; interiorized and transformed into an incentive for action it gives birth to specific behaviors ranging from generally innocuous social networks exhibitionism, like these social networks photo albums full of embarrassing pictures, to violent actions like "happy slapping" in which someone attacks an unsuspecting victim while an accomplice digitally records the assault, often using a cell phone camera. What these conducts have in common is the importance of being potentially or actually watched. On a more general level, surveillance provides a new foundation for spontaneous private and public action. Without surveillance, "smart" or "flash mobs", these sudden collective gatherings reminiscent of performance art, triggered by email or text messaging, would not have the same scope and meaning.<sup>11</sup>

Beyond identity determination and surveillance, digital technologies also play a determining role in the reshaping of cities, fostering their appropriation by individuals.

<sup>11</sup> Howard Rheingold, *Smart Mobs: The Next Social Revolution* (Cambridge, Massachusetts: Perseus Publishing, 2003).

Surveillance camera. 2009 © Rikke. Courtesy BigStockPhoto.com. Surveillance is an essential dimension of the city of digital media.



Map of surveillance cameras in Boston, 2003. Courtesy Surveillance Camera Players.

Four "happy slappers" caught on CCTV. Surveillance is not only a technique of control. It has become synonymous with an individual and social condition leading, for the better and for the worse, to new spontaneous behaviors.



Jakob + MacFarlane,  
Restaurant Georges,  
interior view, 2000.  
Courtesy Jakob +  
MacFarlane.

Office dA BanQ  
Restaurant, 2008.  
Photo: John Horner.

They are in particular instrumental in the various strategies deployed to create a sensory stimulating environment for reasons ranging from the ambition to restore a collective dimension jeopardized by so many recent urban developments to down-to-earth commercial agendas. Indeed, digital age individuality goes with a new sensory receptivity that can be mobilized to promote civic goals as well as mass-customized consumption. Computers are already instrumental in the creation of visual and sound ambiances. They are beginning to conquer new territories linked to the senses of smell, taste and touch. Their pervasive presence constitutes another symptom of the emergence of a new materiality that we have evoked at length in the previous chapter. This new materiality expresses itself not only through phenomena like the evolution of visual codes or the blurring of the distinction between abstraction and concreteness; it involves

our whole sensory experience.

To what extent is digital architecture, in its present state of development, responsive to the context I just evoked? So far, the answer lies primarily in its participation in the reconfiguration of the city in terms of sensory stimulation. With its renewed interest in textures and colors, with its almost tactile appeal to the passer-by, digital design is clearly geared towards the satisfaction of senses. This connection is especially evident with building programs such as fashion boutiques or trendy restaurants that often turn to complex digitally-produced geometries. This tendency is well illustrated by realizations like Ali Rahim's Reebok Boutique in Shanghai, Ammar Eloueini's Issey Miyake me Boutique in Paris, Jakob + MacFarlane's Georges Restaurant on the top floor of the Centre Pompidou, Paris, the Brasserie designed by Diller Scofidio + Renfro in the stone base of the Seagram Building, New York, or Office dA's BanQ Restaurant, Boston. The connection between digital architecture propositions and the innovative restaurant culture that has





Jean-Gilles Décosterd and Philippe Rahm, "Hormonarium," installation for the Swiss Pavilion at the 8th Venice Architecture Biennale, 2002. Photo: Niklaus Stauss, Zurich.

developed in metropolitan cities like London, New York, Paris or Tokyo is especially remarkable.<sup>12</sup> As sociologist François Ascher has argued, few dimensions are more revealing of the contemporary "hypermodern" urban condition than the new attitude that has developed around food, an attitude often designated by the English-derived word "fooding" in French.<sup>13</sup> No longer mere eating, fooding is based on the quest for a more global experience in which unique atmosphere plays an important role. With its spectacular forms and appealing materials, colors and textures, digital architecture is well in accordance with such an agenda.

In contemporary digital culture, the longing for a new synthesis between the various senses sometimes extends further than the type of connection I just evoked. For Swiss architect Philippe Rahm, it involves a realm of sensations linked to the weather and climate.<sup>14</sup> In 2002, in association with Jean-Gilles Décosterd, Rahm gave an arresting expression to this approach in an installation for the Swiss Pavilion at the 8th

<sup>12</sup> See for instance Karen A. Franck (ed.), *"Food + the City"*, Architectural Design (London: Wiley-Academy, 2005).

<sup>13</sup> François Ascher, *Le Mangeur Hypermoderne* (Paris: Odile Jacob, 2005).

<sup>14</sup> Gilles Clément, Philippe Rahm, *Environ(ne)ment. Manières d'Agir pour Demain* (Milan: Skira, Montreal: Canadian Centre for Architecture, 2006).

Venice Biennale. This was "Hormonarium", which purported to recreate the atmosphere ambient at a height of 3,000 meters in the Alps by combining an intense light generated by thousands of fluorescent tubes and an atmosphere in which oxygen was reduced to conform to high-altitude conditions. More recently, in an ambitious project for the French foundation VIA, Rahm has undertaken to reconstitute the specific quality of the air that prevailed in Paris at the beginning of the nineteenth century, shortly before the start of industrialization in France, a project involving considerations such as the degree of humidity of the atmosphere or the type of forest fragrances carried by the wind to the center of the city prior to the reign of steam engines and factory smokes.<sup>15</sup> This

Philippe Rahm, *Terroirs Déterritorisés*, installation and furniture designed for VIA, Paris, 2009. A. Dupuis / VIA. The furniture comprises both very low and very high pieces. They are meant to allow their users to take full advantage of the temperature gradient of the room from floor to ceiling.



<sup>15</sup> Antoine Picon, "Un Art de la Provocation Durable/An Art of Sustainable Provocation", in *Les Aides à la Création VIA 2009* (Paris: VIA, 2009), pp. 34-35.

kind of enterprise revives the quest for immersive sensory environments that had characterized the 1960s and early 1970s.<sup>16</sup> The big difference lies in the strong individual dimension that is attached to it today. Revealingly, Rahm's recent project is related to the research of a new lifestyle that involves the design of innovative furniture.

Despite the pessimistic scenarios that a reading of Mike Davies may inspire regarding the connection between digital architecture and surveillance,<sup>17</sup> this is not what has happened so far. While computers are extensively mobilized for control purposes in the city at large, their impact on the design of spaces has followed another direction. The satisfaction of the senses has prevailed upon panoptic dreams of surveillance. As Bruno Latour has argued convincingly, contemporary surveillance is almost by definition partial and localized, a conclusion equally endorsed by a specialist of urban control such as Paul Landauer.<sup>18</sup> The project of digital architecture is more global. In connection with the quest for a new materiality, it aims at the total reshaping of the urban sensory experience.

A strong caveat must be introduced, however, for there is no guarantee that surveillance will not become a key aspect of future digital architecture development. The importance of virtual and augmented realities is among the factors that may trigger this evolution, for virtual and augmented realities are full of applications in the domain of surveillance.

<sup>16</sup> See for instance Alastair Gordon, *Spaced Out: Radical Environments of the Psychedelic Sixties* (New York: Rizzoli, 2008).

<sup>17</sup> Mike Davies, *City of Quartz: Excavating the Future in Los Angeles* (London, New York: Verso, 1990).

<sup>18</sup> Bruno Latour, Emilie Hermant, *Paris Ville Invisible* (Paris: Les Empêcheurs de Tourner en Rond, La Découverte, 1998), Paul Landauer, *Ordre Dispersé: Les Nouvelles Conceptions Urbaines de la Sécurité* (Paris: Plan Urbanisme Construction Architecture, 2008).

## AN AUGMENTED URBAN REALITY

In the past years, an enormous body of literature has been devoted to the development of virtual spaces and their impact upon architecture. At the same time, one should keep in mind that architecture has always had a relation to the virtual realm, if only because of the importance of the project as an anticipation of a built reality, or rather as a potential realization. In other words, the project is nothing but virtuality.

As German historian of art Oliver Grau reminds us, from the illusionist decorations of Roman villas to baroque trompe-l'œil ceilings and cupolas, the notion of immersive space is something almost as ancient as architecture itself.<sup>19</sup> Since its inception, the architectural discipline has fed upon a whole range of resources located so to say on the other side of the mirror.

The development of cyberspace marks however a break from these previous forms of architectural virtuality for at least two types of reasons. The first has to do with the fact that the new electronic virtual reality is at the bottom social, inseparable from countless possibilities of encounters and exchanges between actors. Let these actors be humans or electronic entities like those web robots or "bots" which perform certain specific tasks on the web, from system maintenance to users' assistance. The social character of virtual reality is, however, of a very particular nature, since the protocols of interaction are generally designed instead of being the product of spontaneous social auto-organizing processes.

Luc Courchesne,  
Portrait One,  
1990, interactive  
video installation.  
Courtesy Luc  
Courchesne.  
Interaction is a key  
component of  
today's virtual  
reality.



<sup>19</sup> Oliver Grau, *Art: From Illusion to Immersion* (Cambridge, Massachusetts: MIT Press, 2003).



Jeff Huang, Muriel Waldvogel, Swiss House in Cambridge, Massachusetts, 2000. Jeff Huang, Muriel Waldvogel.

Another major difference with the past lies in the way electronic virtual reality relates to the physical world. Besides anticipation and immersion into an illusionary world, many other types of relations have appeared that architecture has to consider. Telepresence is probably among the most spectacular ones. From teleconferencing to telesurgery, cyberspace-enabled remote interaction has become customary. In those interactions, space is both negated, since distance is the obstacle to overcome, and recreated as a mix of physical and electronic reality. Other types of relations can be of a didactic nature. Indeed, nothing replaces spatial analogies in order to bring clarity to a material or a topic. E-commerce corresponds to another set of possible articulations between physical and electronic worlds. One could multiply such examples. Today,

the relations between the real and the virtual in which space has a fundamental role to play have become extremely diverse.

Beyond the realm of architecture, it is striking to observe how, far from becoming autonomous from physical reality, electronic reality is hybridized with it most of the time. Instead of facing two loosely connected worlds, one rather has to deal with an augmented reality in which the physical and the electronic are increasingly interacting. Smart phones are emblematic of this regime of intensified interaction.

A city of electronically-equipped individuals, the contemporary digital city can be also characterized by the pervasiveness of augmented reality. This pervasiveness is not the result of comprehensive planning. It is striking to observe how urban evolution has not followed the path opened up by global projects like Amsterdam 1994 De Digitale Stad that intended to extend the city of brick into the electronic realm in a systematic way. The result of scattered but often technically compatible initiatives, today's augmented reality is both fragmented and susceptible of interconnection.

In such a context, architecture appears as a level of intervention as strategic as smart phones and personal digital assistants. It provides many opportunities to take advantage of the possibilities offered by augmented reality. Some of these possibilities imply concrete transformations, such as those necessary to accommodate advanced telepresence. One can, for instance, imagine rooms designed so that an event can take place with half of the participants physically present and the other half in some remote location. This is one of the key aspects of Jeffrey Huang's Swiss House in Cambridge, Massachusetts. Opened in 2000, the facility is often presented as a "digital consulate" because of its capacity to connect Swiss expatriates to places and people in their homeland. Augmented reality is most of the time based on the enrichment of the physical environment with electronic content. Conceived as giant screens, façades can serve that purpose easily. Inspired by existing urban sequences like Times Square in New York or Shinjuku in Tokyo, this perspective has been explored by projects like the MIT Signage concept for Digital

Jonathan Monk, "SPOTS," Potsdamer Platz, Berlin, 2006. Photo: Copyright Bernd Hiepe. For eighteen months, this was one of the largest media façades in the world, presenting diverse various artistic programs.



Signage concept for Digital Media City, Seoul Korea. Courtesy Dennis Frenchman and Lining Geng, MIT.

Media City in Seoul, or the SPOTS Media and Light Façade located on Berlin's Potsdamer Platz. In many cases, what seems at stake is the generalization of interface beyond computers, cell phones and personal digital assistant screens. Eventually, such a generalization will involve more than the senses of vision and touch that screens are already mobilizing today. The attempts to address the

rich and complex sensory requirements of the digital individual converge with the prospects to play on the resources of augmented reality.

Other techniques used to couple physical and electronic spaces do not require immediate architectural transformations. Electronic tagging – a practice that will play a more and more important role in the years to come, insofar that it enables to feed portable terminals such as smart phones with localized content – does not correspond to specific

design requirements. Its architectural implications are nevertheless profound since tagging can endow space with new properties by linking it with information, but also with images and sounds that can be delivered through personal digital interfaces.

Among the long-term consequences of tagging spaces and/or people and their belongings, one might encounter a tendency to weaken the role of partitions, and even to soften the distinction between exterior and interior, since walls may lose part of their relevance in a geography determined as much by electronic boundaries than by physical obstacles. In their initial proposal for their Blur Building for the Swiss Expo 2002, Diller Scofidio + Renfro had foreseen such an evolution. Indeed, at the initial stage of the project, the suppression of walls found its counterpart in a system of tagged "braincoats". Carrying the information relative to the choices made by visitors in a questionnaire taken before visiting the building, those "braincoats" would have reacted to the presence of other visitors according to the similarity or dissimilarity

Diller Scofidio + Renfro, Blur Building for the 2002 Swiss Expo, Yverdon-les-Bains, Switzerland, general view. Courtesy Diller Scofidio + Renfro.





Diller Scofidio +  
Renfro, Braincoat.  
Courtesy Diller  
Scofidio + Renfro.

between their profiles. In the middle of the cloud generated by thousands of fog nozzles, tagging was thus meant to substitute itself to traditional architectural partition by defining subgroups of visitors and fostering exchange among these groups.

Despite their diversity, most of the techniques that I have just evoked share a common denominator of concern for interactivity that is an integral part of digital architecture's performative attitude. Interfaced or tagged, architectural space is more and more supposed to react to the presence of people, let this presence be physical or electronic. Through its reactivity, architecture is in profound accordance with a third characteristic of emergent digital city: the importance of occurrences and events as the true foundation of contemporary urban life.

## EVENTS, SIMULATIONS AND SCENARIOS

What does it mean for the city to become synonymous with occurrences and events? A detour by urban mapping constitutes an enlightening introduction to the question. Indeed, to map a city is not only to represent it but also to make sense of it. Maps are not only a representation of what is; in an implicit or explicit manner, they make a case for what is really important, what should be kept and what should be transformed, and in what direction.<sup>20</sup> Thus throughout urban history maps have inextricably been about assessment and project. In the Renaissance, many maps were meant to draw the portrait of the city and its main monuments. In the seventeenth and eighteenth centuries, maps were more about representations of urban geometry and the rationalization of urban fabric using composition techniques. In the nineteenth century, they conveyed the new technological dimensions of the city, such as territorial networks.<sup>21</sup> What type of maps can make sense of our contemporary city?

Because cities have become incredibly complex, unbounded entities, traditional cartographic tools are no longer appropriate. How do we map a city such as Paris, where the superposition of networks makes it difficult to understand even the historic city center using traditional representation tools? Contemporary maps may very well be of two types related either to global phenomena or to individual experiences. Both are digitally produced and displayed.



System Surf 2000.  
Préfecture et Ville  
de Paris. The  
screen displays in  
real time the traffic  
conditions in Paris  
as well as the  
localization of the  
control cameras.

<sup>20</sup> John Pickles, *A History of Spaces: Cartographic Reason, Mapping and the Geo-Coded World* (London, New York: Routledge, 2004).

<sup>21</sup> See Antoine Picon and Jean-Paul Robert, *Le Dessus des Cartes: Un Atlas Parisien* (Paris: Pavillon de l'Arsenal, Picard, 1999), Antoine Picon, "Nineteenth-Century Urban Cartography and the Scientific Ideal: The Case of Paris", in Sven Dierig, Jens Lachmund, J. Andrew Mendelsohn (eds.), *Science and the City*, Osiris no. 18, 2003, pp. 135-149.



Control room of the Société Anonyme de Gestion des Eaux de Paris (SAGEP), the company in charge of the water supply of Paris. SAGEP. There again, the current condition of an urban technical system can be visualized in real time. The control room can be considered as a modern and specialized equivalent of the Panopticon.

police, in conjunction with surveillance cameras, to represent the current level of security in the streets of the city. Another one displays the condition of the water system. As Bruno Latour rightly points out, the term global is misleading here, for these maps do not at all represent all aspects of the city, but only a selected perspective.<sup>22</sup> Latour tends to forget, however, that this selective character was always true of maps.

A second category of urban representation, one which has become more important in recent years, is the map of local or individual experiences. The most emblematic of these representations are the maps that appear on personal digital assistants or global positioning systems. These maps show us the city as we experience it, with the nearby possibilities offered to us during our peregrinations. It is worth noting how various contemporary artists have become similarly obsessed with the possibility to map day after day their urban experience. This obsession is echoed by the millions of blogs that convey urbanites' individual sensations and perceptions in a way strongly reminiscent of maps.

Global maps are dynamic representations that show the city from a control-room perspective. In the case of Paris, there is a global map of traffic in and around the core city that is used by transportation authorities to coordinate circulation at a central level. Downgraded versions of this map can be consulted on the Internet or on television screens at Roissy and Orly airports. Other digitally-produced global maps are used by the

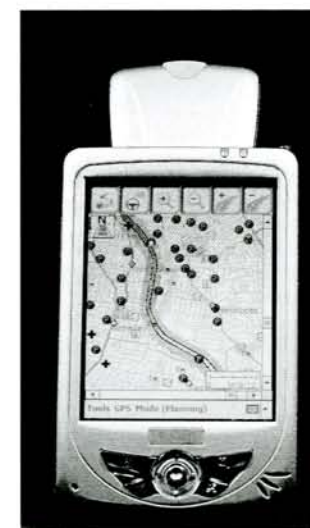
<sup>22</sup> Bruno Latour and Emilie Hermant, *Paris. Ville Invisible (Paris: Les Empêcheurs de penser en rond, La Découverte, 1998)*.

One of today's major challenges is concerned with the ways to integrate the global and individual levels for reasons ranging from surveillance to commercial issues. In many respects, this is what the SENSEable City Laboratory or Urban Mobs maps try to achieve, using cell phones as the key element which makes this integration possible. In such a perspective, the individual phone becomes analogous to an elementary pixel, and integration appears strangely similar to the possibility of zooming in and out.

Despite the new means to articulate global and individual urban representations almost seamlessly, in a way representative of what it means to live in a world marked by zooming practices, one may wonder what these representations have in common beyond being produced by digital technologies. I would like to propose that they share another fundamental property, namely to map occurrences, events, and situations, rather than objects, arrangements, and organizations. What we see in the urban control rooms is a series of occurrences, situations and possible scenarios. Similarly, what we see through the GPS is intimately linked to where we are, what we have done and what we intend to do, in other words to events and scenarios. The big difference between the two types of representation is of course that of scale; while the former type functions at the scale of the city, the latter operates at the scale of the individual. Yet, as we have seen, these scales are more and more interdependent.

Digital media play an essential role in fostering an event-based perception of urban organization and urban life. As we have seen, one of the first major applications of computers, the North American antimissile system, was meant to allow operators to see situations such as a nuclear attacks. In the Cold War perspective analyzed by historian Paul Edwards, the computer screen was an integral part of the war room.<sup>23</sup> The profound connivance between the nascent digital culture and the Cold

Handheld GPS device. 2005 © Ximagination. Courtesy BigStockPhoto.com. The city as it appears to the individual. There is a complementarity between the real time digital Panopticon and the increasingly customizable maps that appear on personal digital assistant and smart phone screens.



<sup>23</sup> Paul Edwards, *op. cit.*

War related to the role they both gave to events and their possible integrations into scenarios.

The relation between digital culture and events is rooted in the peculiar nature of information. As philosopher Pierre Lévy has reminded us, a bit of information is not a thing but an occurrence, an elementary event.<sup>24</sup> It exists as something that happens. As we have seen also, the performative turn taken by digital architecture is in profound accordance with the mode of being of information. Just like the bits that determine its properties on the computer screen, architectural form happens, so to say.

This growing importance given to events is not the result of computerization. Computers appear rather as revelators of a broader evolution, the earlier expression of which can be traced in the architectural and urban domain as early as the 1950s and 1960s. In those years, cities and their representations began to be apprehended as systems of events by various avant-garde movements. Opposing the sterility of the city conceived by modern planners, Archigram's 1963 *Living City* exhibition emphasized the vitality of the city as a structure, as a global environment enabling the production of occurrences, events and scenarios.<sup>25</sup> In their understanding of events and the city, Archigram significantly drew upon the sociologist Henri Lefebvre's concept of everyday life, and above all on the Situationists' city as a living matrix of situations that could be explored only through drift and psychogeography.<sup>26</sup> The Paris evoked in the famous "psychogeographic" maps of Guy Debord and Asger Jorn was to be interpreted in that way. Despite its exclusion from the Situationist movement, the Dutch artist Constant was to remain faithful to this interpretation with his New Babylon project series, all of which tried to give a spatial consistency to the notion of a city of events.<sup>27</sup> The megastructural movement was permeated with a similar intuition, with megastructures often interpreted as devices to promote random encounters and situations. This was already the case with the Smithsons' Golden Lane project.<sup>28</sup> An architect like Yona Friedman had something similar in mind with his spatial cities in which people would wander, roam and meet, like passengers on the deck of an ocean liner.<sup>29</sup> Archi-

<sup>24</sup> Pierre Lévy, op. cit.

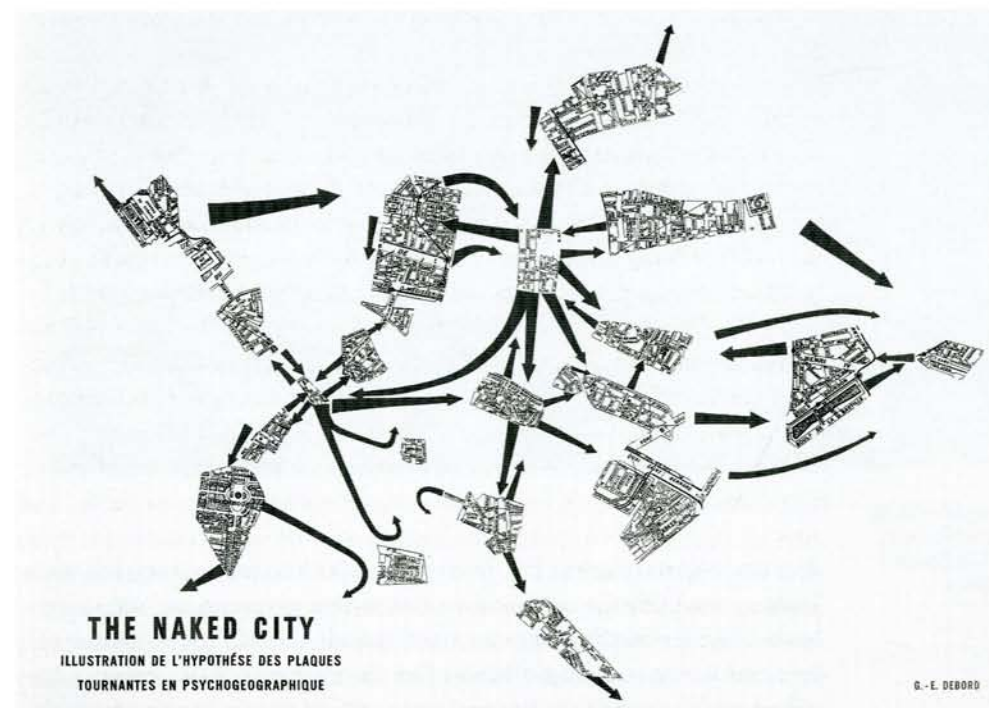
<sup>25</sup> See Archigram (Paris: Editions du Centre Georges Pompidou, 1994), Hadas Steiner, *Beyond Archigram: The Structure of Circulation* (New York: Routledge, 1998).

<sup>26</sup> Simon Sadler, *The Situationist City* (Cambridge, Massachusetts: MIT Press, 1998).

<sup>27</sup> Mark Wigley, *Constant's New Babylon: The Hyper-Architecture of Desire* (Rotterdam: Witte de With Center for Contemporary Art, 010 Publishers, 1998).

<sup>28</sup> See Dominique Rouillard, *Superarchitecture: Le Futur de l'Architecture, 1950-1970* (Paris: Editions de La Villette, 2004).

<sup>29</sup> Sabine Lebesque, op. cit.



Guy Debord, Asger Jorn, "The Naked City: Illustration de l'Hypothèse des Plaques Tournantes en Psychogéographique", 1958. Heidi Meister. For the Situationists, a city like Paris appeared as a matrix of possible events and scenarios.

gram's megastructural production follows the same path. With its aerial promenade meant to foster encounters and conviviality, the Centre Pompidou is probably one of the ultimate forms taken by this vision.<sup>30</sup>

The spectacular development of digital media has reinforced our perception of cities as spaces or territories where things literally take place. Through the pervasive presence of digital media, our life is structured by thousands of events that organize our perception of cities, and generally the world, as "what happens." "What happens" was actually the theme picked in 2002 by Paul Virilio for an exhibition and a book.<sup>31</sup> The main limitation of the project, however, was to focus only on the

<sup>30</sup> On the Centre Pompidou's ambition, see Renzo Piano and Richard Rogers, *Du Plateau Beaubourg au Centre Pompidou, a conversation with Antoine Picon* (Paris: Editions du Centre Georges Pompidou, 1987).

<sup>31</sup> Paul Virilio, *Ce Qui Arrive*.



Dead fish in Rio de Janeiro bay. AFP PHOTO/Antonio SCORZA.

dramatic events of urban life, from major floods to terrorist attacks, overlooking the millions of quotidian events that structure our urban existence. These everyday events would include the various festivals, celebrations and games that characterize the contemporary urban scene. Allied with surveillance technologies, digital media present us with a “happening-spectacle” of our urban environment, from major events to minute occurrences of traffic notifications and weather forecasts. As we have seen, recent developments in urban mapping have followed this line and considered events as landmarks that can define our contemporary city as much as monuments do.

I would like now to evoke a few dimensions of the city as a system of events, as well as describe some difficulties that arise from such an approach to urban problems. Reflecting on events takes a more productive turn when seen as the third distinguishing feature of the digital age city, besides individualization and augmented reality, rather than focusing on the opposition between concentration and dispersion or between the local and the global.

Before dealing with the city of events, though, one should probably clarify some of the features of contemporary events. What we call “event” today is in various ways different from former notions of the term. At an earlier stage, computable processes did not give birth to real events, because of the connection that existed between computability and predictability. What was computable seemed at the same time foreseeable. We have now become accustomed to a world in which the most unpredictable phenomena are often based on computable processes. The financial markets, with their sophisticated products based on mathematical formulas, are perhaps the best examples of this situation. Although retrospectively foreseeable, the crisis that has affected them took everybody by surprise.

In the same vein, contemporary events transcend the convenient binary oppositions that are used to define the world in which we live. For instance, events are both narrative or meta-narrative, insofar that they are produced by an intentional application to some human end, like the management of the finance system, while being at the same time comparable to enigmatic natural phenomena in their unpredictability and ineluctability, a feature that is fundamentally different from the surprising turns of a literary plot. In that respect, and contrary to what one might expect, these events do not correspond to those envisaged by philosopher Paul Ricoeur in *Temps et Récit* in which the literary plot appears as the matrix of what can possibly happen.<sup>32</sup> Thus, they challenge the accepted boundary between the artificial and the natural, and in their perception even call for a reconstruction of those two categories fostered by a new alliance between computability and unpredictability.

One last note would be that events function at different levels. An event is always in-between the pure affect that escapes language on the one hand, and the situation of communication, on the other. Similarly to the new types of urban maps I previously evoked, events can happen at an individual or a collective level. For the individual, events can be close to pure sensations. Actually, our sensory experiences are often assimilated into an event that has happened to us and shapes what

<sup>32</sup> Paul Ricoeur, *Temps et Récit* (Paris: Le Seuil, 1983-1985).

we are. A whole set of contemporary architectural productions play explicitly on this new sensory dimension. Yet at the same time, events can be key elements in the conscious construction of our identity and life – something that belongs to the sphere of language and narrative. The blog is one of the best expressions of this phenomenon, and is the closest to the Situationists' notion of psychogeographic drift.

At a more collective level, a somewhat similar distinction can be made between the event as a collective ambiance or atmosphere and the event as an element of a global narrative or scenario. In the case of Paris-Plage, the annual transformation of the river Seine embankments into beaches with sand and palm trees, even more than an atmosphere, the event is a narrative on the future of the city. It is, for better and for worse, a project on the French capital covering, among other aspects, the renunciation of the automobile and the development of a leisure-based approach to the city center.

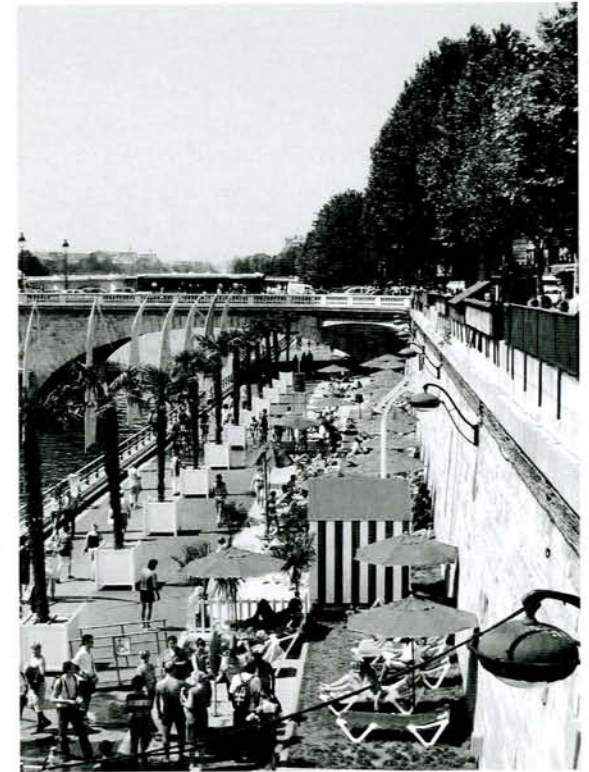
The city harbors the diffuse hope of being the place where all these contradictory aspects are reconciled. The city is supposed to be both plotted and inhabited by an almost organic life. It is striking to observe the contemporary insistence on the organic-like quality of the city, in complete opposition with the modernist belief in planning. Koolhaas's *Generic City*, and the fascination with urban scenes like Lagos or Shenzhen that it conveys, are part of this trend.<sup>33</sup> The same context probably explains the quest for alternative modes of urban regulation that characterizes political science today. Governance may be seen as related to the recognition of the shortcomings of traditional planning when dealing with urban organisms that are both plotted and somewhat unpredictable.

The contemporary city must be a city of sensations and ambiances, directly related to its increasingly individual character, and at the same time a city of collective narrative and scenarios. With these somewhat contradictory expectations, we are not so far from Constant's New Babylon and his desire to reconcile the spontaneous and the planned. In practice, this leads to many dilemmas. These involve architecture, in one way or another, for architecture; digitally-produced architecture in particu-

lar, with its performative stance, seems to be in a key position to address in a productive way the unavoidable contradictions of an event-based urban reality.

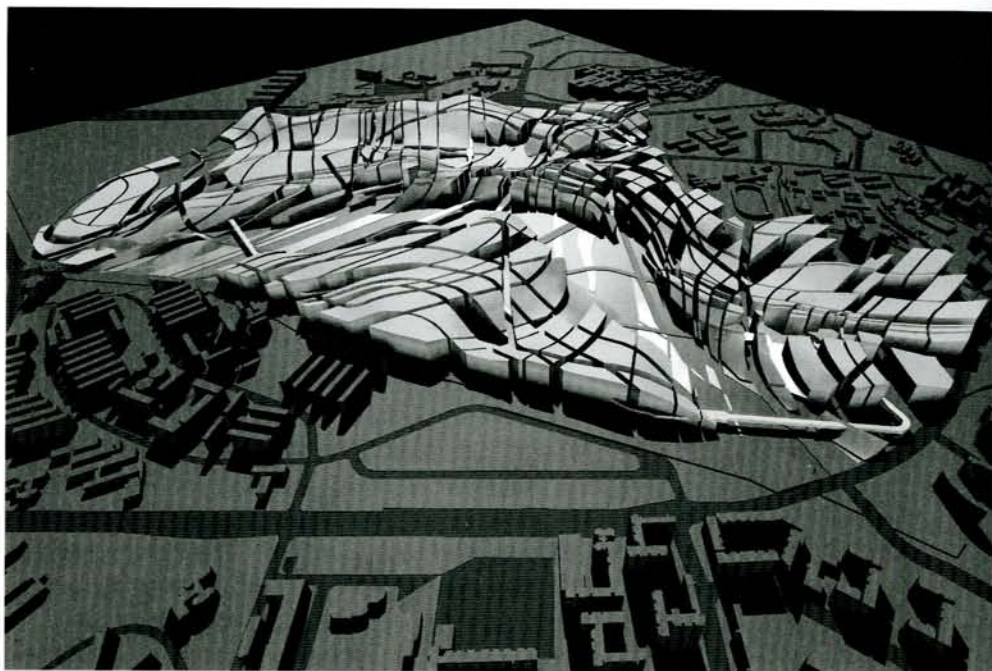
First, the temptation is great to reduce architecture to an urban event, with the hope that such a reduction would enable architecture to speak to both the individual senses and to the collective longing for meaning and symbols. The Guggenheim effect, and generally the architectural star system, are to be understood in this context. But can architecture perform at that level only? Nothing is less certain.

The reduction of architecture to an event is also fostered by the use of the computer. On the computer screen, as a temporary appearance or a selection in a geometric flow, architectural form takes place. However, it is never clear whether the status of event of the architectural representation can be transposed to the built object. Nevertheless, this situation explains the double temptation that architecture is exposed to: its submission to the logic of affect or its transformation into a mere medium of communication. Both meet around the question of ornament, ornament as something that simultaneously addresses the needs of the senses and the requirements of communication.



Paris-Plage. The annual festival based on the transformation of the banks of the river Seine into a beach, complete with palm trees, sand and deckchairs, has become an institution.

<sup>33</sup> Rem Koolhaas, Stefano Boeri, Sanford Kwinter, Nadia Tazi, Hans Ulrich Obrist, *Mutations* (Barcelona: Actar, 2001).



Zaha Hadid, One North Masterplan, Singapore, 2001. Courtesy of Zaha Hadid Architects. Although officially called a plan, this type of proposal is more like a scenario using formal seduction to convey the dynamism of one of today's global cities.

Equally challenging if one chooses to relate architecture and events is the issue of public space. With the development of digital culture, public space has been submitted to thrusting pushes and pulls. Although the reduction of public space to collective environments and atmospheres has been explored by artists and architects since the 1950s,<sup>34</sup> it could be argued that the contemporary development of electronic networks has privileged the opposite interpretation of public space as a sphere of interaction.

Another significant challenge, the most important perhaps, is the difficulty in reconciling the hyperindividualistic turn of contemporary life with the construction of a collective narrative in order to make sense

<sup>34</sup> Le Corbusier's Philips Pavilion was already an experiment in that direction. Marc Treib, *Space Calculated in Seconds: The Philips Pavilion*, Le Corbusier, Edgard Varèse (Princeton: Princeton University Press, 1996).

of social life. Mainly because of its capacity to produce spectacular forms akin to events and to embody the promise of some collective meaning to come, architecture seems better equipped than urban design to deal with this challenge.

At a more general level, the city of events perspective has fostered a profound evolution of the design tools meant to shape the future. In many instances, traditional planning is progressively replaced by the elaboration of narratives and scenarios. This epistemological shift also explains the contemporary role of star architects in urban debates. In the context of a growing competition between cities, the star architect is expected to provide the necessary glamor to local urban scenarios.

The transformation of plans into scenarios accounts for fundamental evolutions, notably in the relation of the city to nature. For the nineteenth- or twentieth-century planner, the aim was to introduce nature into the city, New York City's Central Park probably being the best expression of this ambition. With the contemporary discourse on sustainability, the perspective is to write a scenario of harmonious

Rios Clementi Hale Studios, Fresh Kills Park, 2002. Courtesy Rios Clementi Hale Studios.



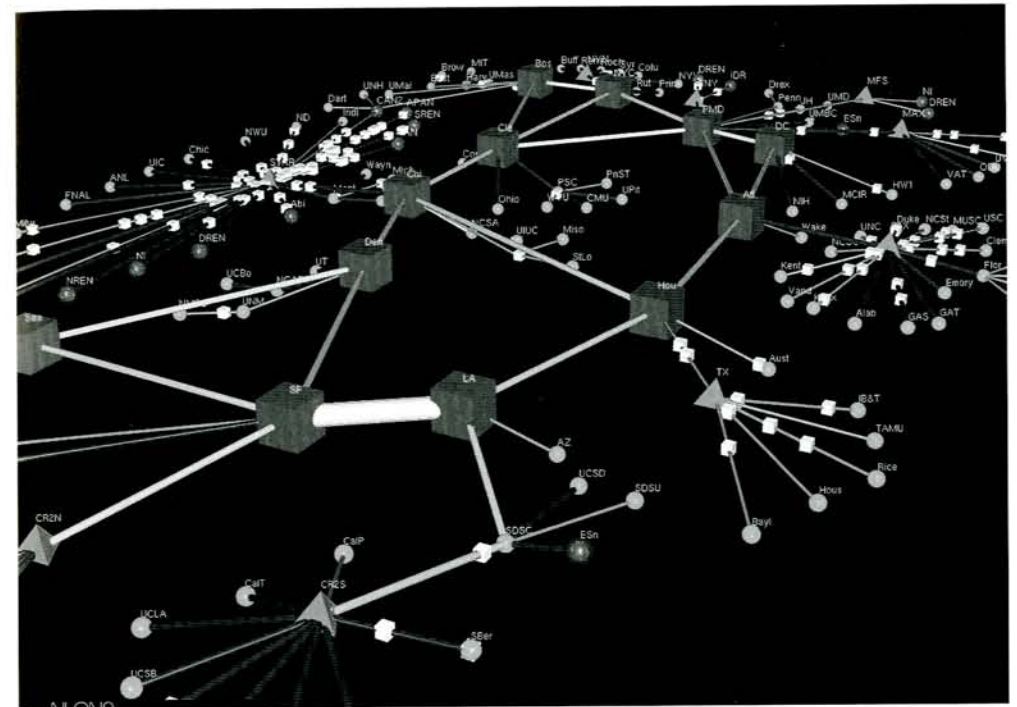
co-evolution between the natural and the urban, often involving complex remediation projects like Fresh Kills on the New York City borough of Staten Island, the largest urban dump on which a new park is to be created.<sup>35</sup>

The tensions and contradictions I have pointed out do not necessarily constitute the greatest problem of the conception of the city as a city of events. Its ultimate shortcoming remains the complex relation to memory and history. There again, the convergence between the present fate of architecture and the urban prospects that are currently unfolding in relation to the rise of digital culture is striking. The suspension of the historical and memorial dimension of architecture coincides with a larger crisis of the sense of history.

The accumulation of events leaves us with the curious impression of living in an eternal present, the Internet being the ultimate manifestation of this strange feeling. Although the Internet has a history, since it is made of billions of bits that are in a state of continuous flow, and despite its archival dimension linked to the fact that while it is changing it simultaneously keeps the trace of its successive states, it seems to be immersed in an eternal present.

In that respect, the Internet reproduces a characteristic of the world of globalization. As I have already noted, the "flat" world of globalization is often perceived in the light of a never-ending present, like a process of indefinite intensification. In his best-seller, *The End of History and the Last Man*, some sixteen years ago Francis Fukuyama gave one of the most striking expressions of this approach.<sup>36</sup> Despite the multiplication of local conflicts of all kinds, the fact that there seems to be no clear alternative to the capitalistic world leaves us prone to the same kind of impression.

This world is full of dynamism. Political regimes come and go, wars erupt and turn badly, new sources of profits emerge and corporations are created while entire sectors of the economy decline and disappear. The Internet is the ultimate expression of a dynamism that is profoundly analogous to the way bits of information are created and cir-



3D model, vBNS network, 2004. Model by Jeff Brown, MOAT / NLNR. It is not fortuitous that so many representations of cyberspace evoke urban night ambiances.

culated. Actually, the creation, circulation and destruction of information are among the engines of our present world. But the multiplication of things that happen at every level creates a scintillating giant texture rather than a clear series of patterns.

In relation to this giant texture, it is striking to note that one of the most common visual metaphors associated with the Internet is a city, or a strip seen at night from above. The Internet as a giant Las Vegas, centered on its animation and somewhat oblivious to the possibility of an historical evolution: the metaphor was already present in Gibson's *Neuromancer* or in Stephenson's *Snow Crash*.<sup>37</sup> Today it is more pervasive

<sup>35</sup> On the Fresh Kills project, see Praxis, Journal of Writing+Building, no. 4, 2002.

<sup>36</sup> Francis Fukuyama, *The End of History and the Last Man* (New York: Free Press, 1992).

<sup>37</sup> William Gibson, op. cit., Neil Stephenson, op. cit.

than at the time of these pioneering contributions to cyberpunk fiction. The entire world has become comparable to a sparkling strip advertising all kinds of news, from military conflicts to Hollywood releases, with the same frenzy.

In this suspended state of perpetual present, the only historical perspective that remains is the threat of a final disaster, such as global warming. Provoking precisely the end of history, this perspective is characterized by the French philosopher Alain Badiou as the convergence between a conservative agenda and an obscure longing for catastrophe.<sup>38</sup> Even more than the conservative agenda evoked by Badiou, what lies behind this perspective is perhaps a fundamental lack of inertia. A world that is over-sensitive to micro-change, a world without inertia, is running the risk of Brownian-like agitation, ultimately deprived of a clear direction.

This shed new light on issues of materiality, opacity and resistance. The traditional city was full of events, but they were counterbalanced by a lot of resistance, beginning with the inertia of built objects and spaces. By reinterpreting objects and spaces as mere facilitators, we tend to deprive them of their capacity to act as stabilizers of urban life and urban experience. Their stabilizing power may be indispensable for meaningful change. We may, therefore, have to reinvent a conception of digital media not only as tools for immediate interaction but as means to promote delay, even opacity.

In the same vein, architectural transparency, at least in its sophisticated and enduring form, was never about mere phenomenal transparency. It often required some degree of its contrary, that is, opacity.<sup>39</sup> The same is probably true with the responsiveness to digital media that designers are looking for today. Counterbalancing an excessive subservience to all sorts of occurrences and events fueled by the desire to be in tune with the latest technological and social trends, the effective responsiveness to the long-term social dynamics linked to the development of digital culture might require some degree of purposefully constructed opacity and inertia. Such purposefully constructed opacity and

inertia appears as the precondition for urban life to become receptive again to historical consciousness, that is, to the possibility of a future that radically differs from the present while remaining distinct from the catastrophic scenarios that are proliferating today.

## TOWARDS A SPLINTERED CITY?

Besides the historical and memorial dimension, one of the most pressing questions regarding our urban future has to do with coherence or incoherence of what is awaiting us. The problem is a priori more political and social than spatial. Can a city of individuals be imbued with collective values? Is augmented reality compatible with the reinvention of genuine public space beyond the superficial interactions made possible by tagged spaces and personal digital assistants? These interrogations are perhaps among the most pressing issues that await whoever tries to address the challenge of the emerging digital city.

In an influential book published in 2001, two British specialists of contemporary urban questions, Stephen Graham and Simon Marvin, developed a pessimistic hypothesis according to which city evolution is entering a phase of increasing splintering.<sup>40</sup> According to them, technological networks that were initially conceived to integrate urban diversity are introducing major disparities in terms of accessibility to the services they provide. Instead of connecting all the citizens of a given city, they link parts of the city, for instance business districts, to similar parts of other cities, like islands in an archipelago. In their analysis, digital technologies, beginning with telecommunications and the Internet, are highly emblematic of this double process of local fragmentation and global connection. Following the loose integration that characterizes the Internet, digital infrastructure is generally prone to fragmented modes of organization and regulation. The digital condition is synonymous with a growing segmentation of lifestyles and markets, thus increasing the overall urban splintering.

<sup>38</sup> Alain Badiou, *L'Éthique. Essai sur la Conscience du Mal* (Paris: Hatier, 1993), p. 36.

<sup>39</sup> See Eve Blau, "Transparency and the Irreconcilable Contradictions of Modernity," in *Praxis. Journal of Writing+Building*, no. 9, 2007, pp. 50-59.

<sup>40</sup> Stephen Graham, Simon Marvin, *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition* (London, New York: Routledge, 2001).

Such an analysis is not without reminders of the hypothesis of the fragmented postmodern digital self that sociologist Sherry Turkle made in *Life on Screen*. What is happening to the city, according to Graham and Marvin, looks strikingly similar to the dissolving effects on individual identity that Turkle attributed to the computer. Following the analogy, it is then tempting to raise an objection to Graham and Marvin's analysis similar to the one Katz and Rice opposed to Turkle's approach, namely that individual fragmentation is counterbalanced by new integrative dynamics like homepage construction or blogging.<sup>41</sup>

At an urban level, the equivalent of these individual integrative dynamics could very well lie in the shared experiences and narratives that are made possible by digital media. From the most immediate sensory experiences to the general narratives that are meant to replace former master plans, one cannot be anything but struck by the strategic position occupied by architecture. As we have seen, architecture is indeed present at those various levels.

The very possibility of these shared experiences and narratives is guaranteed by the increasing closeness of the world that we inhabit. As Peter Sloterdijk puts it, we are now living in an interior, or rather in a series of interiors – the “spheres” that give their name to his major philosophical trilogy – that cover the entire planet.<sup>42</sup> Because of this generalized interiority, design matters more than ever as a collective activity that replaces former notions of destiny. For better and for worse, we are in charge of the design of our entire world, from materials to buildings, from the management of local natural preserves to the answer brought to challenges like global warming.

In such a world, the process of splintering is necessarily limited by the constraints of generalized interiority. Architecture represents an emblematic practice in this context. Besides investigating the new relation to material reality, or rather the new materiality implied by generalized interiority, its role is also to explore what is politically and socially conceivable, in particular the possibility of creating a new public space, despite all the tendencies to the contrary that can be observed, from the

oblivion of history to the fragmentation of urban operations. This requires reinventing properties such as gravity or opacity, as well as giving a new meaning to tectonic in the context of a pervasive digital culture. Advancing in this direction may seem at first almost regressive to some of the most passionate advocates of sheer technological novelty. But what constitutes the architectural discipline if not the constant reinterpretation of some of the most ancient human experiences and notions?

<sup>41</sup> Sherry Turkle, *Life on Screen*, James E. Katz, Ronald E. Rice, *Social Consequences of Internet Use*.

<sup>42</sup> Peter Sloterdijk, *Sphären* (Frankfurt: Suhrkamp Verlag, 1998-2004).